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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,306

06/23/2006

Takashi Ikemoto

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9018

22852

7590

09/21/2009

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EXAMINER

ETHERIDGE, EMPRESS A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

09/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,306	<b>Applicant(s)</b> IKEMOTO ET AL.	
	<b>Examiner</b> Empress Etheridge	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/02/2008, 10/15/2007, and 06/23/2006</u> .                  | 6) <input type="checkbox"/> Other: _____                          |



## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, claims 1-4, in Paper filed July 2, 2009 is acknowledged. Claims 5-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 2, 2009.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as obvious over Nomi et al. (JP Pub. No. 2000-256491) ("Nomi") in view of Oka et al. (U.S. Pat. No. 5,830,603) ("Oka").

Regarding claim 1, Nomi teaches a porous film made of polyolefin (see paragraph [0006]) having a thickness of 10-100 microns (see paragraph [0020]), a void content (porosity) of 40 to 70% (see paragraph [0021]), an air transmission rate (gas transmission rate) of 100 to 1500 sec/100cc (see paragraph [0022]), a piercing strength of 800gf/25 microns (see paragraph [0023]). These values would either fall into or overlap those presently claimed for these properties. Because the recited properties would to some extent affect each other, those that are not directly disclosed would inherently accrue. Because the properties of the film of Nomi either fall into or overlap the present ranges recited, the present microporous membrane would be either anticipated by or at best obvious over Nomi.

Nomi fails to explicitly teach the maximum pore size and a ratio of the maximum pore size to the average pore size of 1.00 to 1.40.

However, Oka teaches a nonaqueous electrolyte battery comprising a separator film made of a microporous polyolefin (see column 6, lines 42-49). Oka teaches the microporous film has a pore size of preferably not more than 10 $\mu$ m (maximum pore size) (see column 7, lines 14-18) and an average pore size of 10 $\mu$ m (see column 17, lines 1-4), which is the equivalent of applicants' a ratio of the maximum pore size to the average pore size of 1.00. Oka also teaches optimizing the pore size to prevent the cathode and anode from a short circuit (see column 7, lines 14-18). Therefore, it would have been obvious to a person having ordinary skill in the art to modify the pore size of the microporous film for the benefit of improving membrane efficiency because Oka teaches optimizing the pore size of a microporous polyolefin membrane to prevent short

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circuit between the anode and cathode (see column 7, lines 14-18). The discovery of an optimum value of a known result effective variable (pore size), without producing any new or unexpected results, is within the ambit of a person of ordinary skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980) (see MPEP § 2144.05).

Regarding claim 2, Nomi teaches the use of the porous film made of polyolefin as a separator in a battery (electronic component) (see paragraph [0053]).

Regarding claims 3 and 4, Nomi teaches the use of a porous film made of polyolefin as a separator in a lithium cell (nonaqueous electrolyte battery) (see paragraphs [0002] and [0053]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Empress Etheridge whose telephone number is (571)270-7892. The examiner can normally be reached on Monday- Friday 8:30-5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. E./

Examiner, Art Unit 1795

/Dah-Wei D. Yuan/

Supervisory Patent Examiner, Art Unit 1795